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AMPHIBIAN SURVEYS
IN
BANFF NATIONAL PARK
and adjacent areas
2000

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February, 2001

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Summary and Recommendations

This report contains a compilation of observations of amphibians in Banff National Park in 2000. It represents the continuation of surveys begun in 1992 which are intended to provide a better understanding of the distribution of amphibians in this part of the Rocky Mountains. (See McIvor, 1994, McIvor and McIvor, 1995, McIvor and McIvor, 1996, McIvor and McIvor 1997, McIvor and McIvor, 1998, McIvor and McIvor, 1999). These observations include random/opportunistic sightings but primarily are from surveys conducted for the specific purpose of collecting information about amphibians.

Early in the season there was an attempt to locate adult frogs and toads by the sound of their calling at breeding sites. Later efforts involved more concerted searches for egg masses, larvae and young-of-the-year. A variety of wetlands - marshes, ponds, lakes, backwaters of the Bow and other rivers - were surveyed in afternoons or evenings, some on several occasions.

Many places that had been visited in previous years were re-visited. Some other potential breeding sites were checked for the first time, including: Sundance Pond, a pond midway between the Banff Recreation Grounds and the Cave & Basin berm; Tracker's Wetland on the slopes of Castle Mountain; and the ponds west of the Twin Lakes trail. Areas beside the Parkway in Kootenay National Park were checked again this year. Several wetlands in the Yamnuska Natural Area were visited as well.

The earliest records for 2000 were of wood frogs calling on April 23 at Muleshoe Flats, including Goose Pond, and at North Old Dump Wetland where at least 10 adults were seen. This was 4 days later than the previous year. The first wood frog egg masses were seen on April 26 at North Old Dump Wetland and April 27 at Muleshoe Flats where at least 200 adults were active and vocal.

The first long-toed salamander eggs were at Amphibian World and Norquay Pond on May 2. Spotted frogs were calling and egg masses were found on April 25 at the Yamnuska. The first boreal toad egg strings were not found until May 19 at Sunshine Wetlands despite a thorough search on May 14. The previous year, boreal toad egg strings were found at this wetland on May 6.

Direct evidence of breeding in the form of egg masses, larvae, or metamorphosed young was found for all 4 species of amphibian known to occur in Banff National Park. Each of the new areas surveyed had evidence of breeding of at least one species of amphibian. Egg masses of wood frogs and long-toed salamanders were found in the pond between the recreation grounds and the Cave & Basin berm; boreal toad tadpoles were found in Tracker's Wetland; and egg masses of wood frogs and spotted frogs were found in Curve Pond west of the Twin Lakes Trail.

The latest records for the year came from the Yamnuska where 3 spotted frogs (including 2 small juveniles) were found on September 24, and from the shallows at the outlet of Vista Lake where more than 200 boreal toad tadpoles were seen on September 26. Almost two weeks later, on October 8, 60 tadpoles were still in this area although only about 50% appeared to be alive. They were in water that was 2-4 cm. deep, under a thin layer of ice.

In the absence of a more formal program for monitoring amphibians throughout the seasons it is impossible to determine the effect of annual changes in weather patterns. This is true particularly with respect to wetlands that have a tendency to shrink as summer progresses and may dry out completely in years of low precipitation. For example, while Summit Pond held 5 boreal toad tadpoles and a dozen toadlets were found on the moist ground near the shore on September 15, 1999, in the year 2000, it was dry by September 6. There is no way of knowing how many, if any, tadpoles had a chance to metamorphose before the water was gone. However it is obvious that between cold temperatures at either end of the breeding season, and the potential for water levels to vary dramatically in some wetlands, conditions for amphibian reproduction in the mountains are not always ideal.

For a complete report of all the surveys see: Amphibian Surveys in Banff National Park and adjacent areas, 1992-2000, Diane & Mike McIvor, February 2001.

Relevant References.

Bishop, C.A. and K. Pettit. 1992. Declines in Canadian amphibian populations: designing a national monitoring strategy. Occasional Paper # 76. Canadian Wildlife Service. Environment Canada. 120 pp.

Blaustein, A.R. Amphibians in a Bad Light. p. 32-39. Article in Natural History Magazine, October 1994.

Corkran C.C. and C. Thoms. 1996. Amphibians of Oregon, Washington and British Columbia; A Field Identification Guide. Lone Pine Publishing. 175 pp.

Corn, P.S. 1994. What We Know and Don't Know About Amphibian Declines in the West. p 59-67 in Covington, W.W. and L.F. DeBano; technical coordinators. Sustainable Ecological Systems: Implementing an Ecological Approach to Land Management. USDA Forest Service. General Technical Report RM-247.

Drost, C.A. and G.M. Fellers. 1996. Collapse of a Regional Frog Fauna in the Yosemite Area of the California Sierra Nevada, USA. p. 414-425. Conservation Biology. Vol. 10, No.2.

Green D.M. and R.W. Campbell. 1992. The Amphibians of British Columbia. Royal British Columbia Museum Handbook. 100 pp.

Heyer, W.R., M.A. Donnelly, R.W. McDiarmid, L.C. Hayek and M.S. Foster. 1994. Measuring and Monitoring Biological Diversity: Standard Methods for Amphibians. Smithsonian Institution Press, Washington, D.C.

Holroyd G.L. and K.J. Van Tighem. 1983. Ecological (Biophysical) Land Classification of Banff and Jasper National Parks Vol. 111: The Wildlife Inventory. Canadian Wildlife Service Report to Parks Canada. 444 pp.

McIvor, D. 1994. Amphibian Survey in the Bow Valley (including some reptile observations) and some additional observations in Banff National Park, 1992, 1993, 1994 Seasons. Bow Valley Naturalists. 24 pp.

McIvor, D. and M. McIvor. 1995. Amphibian Survey in the Bow Valley, Banff National Park, 1995. Bow Valley Naturalists, 14 pp.

McIvor, D. and M. McIvor. 1996. Amphibian Survey in the Bow Valley, Banff National Park, 1996. Bow Valley Naturalists, 21 pp.

- McIvor, D. and M. McIvor. 1997. Amphibian Survey in Banff National Park, 1997. Bow Valley Naturalists, 29 pp.
- McIvor, D. and M. McIvor. 1998. Amphibian Surveys in Banff National Park and Adjacent Areas 1992-1997. Bow Valley Naturalists, 46 pp.
- McIvor, D. and M. McIvor. 1999. Amphibian Surveys in Banff National Park, 1998. Bow Valley Naturalists, 15 pp.
- McIvor, D. and M. McIvor. 1999. Amphibian Surveys in Banff National Park and Adjacent Areas 1992-1998. Bow Valley Naturalists, 56 pp.
- McIvor, D. and M. McIvor. 1999. Amphibian Surveys in Banff National Park, 1999. Bow Valley Naturalists, 17 pp.
- McIvor, D. and M. McIvor. 1999. Amphibian Surveys in Banff National Park and Adjacent Areas 1992-1999. Bow Valley Naturalists, 66 pp.
- Pacas, C., D. Bernard, N. Marshall and J. Green. 1996. State of the Banff-Bow Valley: A Compendium of Information. Prepared for the Banff Bow Valley Study. Department of Canadian Heritage, Ottawa, Ontario. 291 pp. and appendices.
- Parks Canada. 1995. Initial Assessment of Proposed Improvements (sic) to Trans Canada Highway in Banff National Park. Phase III A. Sunshine Interchange to Castle Mountain Interchange. Parks Canada, Calgary, AB. 6 Sections and References.
- Russell, A.P. and A.M. Bauer. 1993. The Amphibians and Reptiles of Alberta. University of Calgary Press. 264 pp.
- Salt, J.R. 1979. Some Elements of Amphibian Distribution and Biology in the Alberta Rockies. p. 125-136. Alberta Naturalist. Vol. 9, no. 3.
- Seburn, D. 1993. Handbook for Monitoring the Amphibians of Alberta. Prepared for Alberta Environmental Protection, Fish and Wildlife Service. 64 pp.
- Stebbins, R.C. 1985. A Field Guide to Western Reptiles and Amphibians. Peterson Field Guide Series. Houghton Mifflin Co. Boston.

AMPHIBIAN SURVEYS IN BANFF NATIONAL PARK AND ADJACENT AREAS, 2000

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Abbreviations used in this report for amphibians (as per Macdonald, C., W.E. Roberts, D.M. Ealey, The Vertebrate Species of Alberta, Alberta Naturalist, Vol. 23, No. 3, Federation of Alberta Naturalists)

- TISA** tiger salamander (*Ambystoma tigrinum*, Green)
LTSA long-toed salamander (*Ambystoma macrodactylum*, Baird)
BOTO boreal toad (also known as western toad) (*Bufo boreas boreas*, Baird and Girard)
BCFR boreal chorus frog (*Pseudacris triseriata maculata*, Agassiz)
WOFR wood frog (*Rana sylvatica*, Le Conte)
SPFR spotted frog (*Rana pretiosa*, Baird and Girard), reclassified as Columbia Spotted Frog (*Rana luteiventris*), Green et al. 1997
WGSN wandering garter snake (*Thamnophis elegans vagrans*, Baird and Girard)

CODES FOR WIND SPEED AND SKY CONDITIONS

Temperature, wind and sky conditions (T.W.S.) are indicated using numbers: Temperature in degrees Celsius; wind speed according to the Beaufort Scale; and sky conditions using Weather Bureau code numbers as is done for Breeding Bird Surveys.

WIND SPEED CODES:

| Beaufort # s | Wind Speed in miles / hr. | Indicators of Wind Speed |
|--------------|---------------------------|--|
| 0 | Less than 1 | Smoke rises vertically |
| 1 | 1 to 3 | Wind direction shown by smoke drift. |
| 2 | 4 to 7 | Wind felt on face; leaves rustle. |
| 3 | 8 to 12 | Leaves, small twigs in constant motion; light flag extended. |
| 4 | 13 to 18 | Raises dust and loose paper; small branches are moved. |
| 5 | 19 to 24 | Small trees in leaf sway; crested wavelets on inland waters. |

SKY CONDITION CODES:

- 0 - Clear or a few clouds
- 1 - Partly cloudy (scattered) or variable sky
- 2 - Cloudy (broken) or overcast
- 4 - Fog or smoke
- 5 - Drizzle
- 7 - Snow
- 8 - Showers

CASCADE VALLEY

LOCATION: Cascade Valley and adjacent areas.

SITE DESCRIPTION: Horsetail Wetland (UTM: PG047785), located north of Minnewanka road between Lake Minnewanka parking lots and Cascade fireroad.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|------|--------|-------|--------|----------|--------|-------|-------|--|---------|
| 00/05/24 | | | | | | | | | <u>Horsetail Wetland.</u> Nothing seen or heard. | MM |

VERMILION LAKES AREA

LOCATION: Cave & Basin Area. (UTM: NG985695).

SITE DESCRIPTION: marsh complex fed by a sulphur spring.

Horse Barns (UTM: NG993700) located adjacent to Warner's Stables, northeast of Cave & Basin.

Sundance Pond (UTM: NG987697) located between Warner's stables and the Cave & Basin berm.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------------|----------|--------|-------|-------|--|---------|
| 00/04/26 | 17:30 | | 12/1/1 | WOPR | | | | 1 | <u>Horse Barns.</u> Heard and seen in a puddle in the canal W of barns. | M&DM |
| 00/04/26 | 17:40 | | 12/1/1 | WOPR | | | | few | <u>Sundance Pond.</u> Heard a few in this pond at W end of wet sedge meadow. | M&DM |
| 00/05/03 | 16:45 | 11 | 15/2/2 | WOPR LTSA | 22 1 | | | 1 | <u>Sundance Pond.</u> WOPR egg masses seen at W end and along the S/W shore. Most egg masses were single; 1 of 1, 1 of 1, 1 of 1 (silted), 1 of 1, 1 of 1, 1 of 1 (silted), 1 of 1, 1 of 12, 1 of 1, 1 of 1. Water depth 60 cm. Eggs near surface. | M&DM |
| 00/04/09 | | | | LTSA | | | | 1 | Dennis Herman reported seeing a LTSA in his yard at 141A Cave Ave. | DH |

LOCATION: Norquay Pond. (UTM: NG991715).

SITE DESCRIPTION: pond located just east of Norquay Interchange on north side of TCH. The pond is choked with reeds and sedges.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|-------|-------|---|---------|
| 00/05/02 | 16:30 | 10.5 | 14/3/2 | LTSA | 12 | | | | Seen in ditch. Very little water in ditch forming pools. 3 fresh egg masses, others starting to elongate. | MM |

LOCATION: Vermilion Lakes complex. Major wetland forming 3 lakes in BNP west of town of Banff and south of TCH.

SITE DESCRIPTION: VL3 West (UTM: NG953698), wetland west of VL3, includes beaver pond and smaller ponds.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|--------|-------|---|---------|
| 00/04/24 | | | 8/2/2 | WOPR | | | | 2-3 | <u>VL3 West.</u> Heard while canoeing on the Bow as they got near the Osprey nest on the CP tracks just W of VL3. | HD |
| 00/07/13 | 16:00 | | 27/2/1 | BOTO | | | 2 juv. | | <u>VL3 West.</u> Found on the shore of beaver pond. | DM |

SUNSHINE WETLANDS

LOCATION: Sunshine Wetlands. (UTM: NG908682).
SITE DESCRIPTION: calcareous ponds just west of Sunshine turn-off, on north side and beside the TCH.
Pond #1 & West (UTM: NG907682).
Pond #2 (UTM: NG907683).
Pond #3 (UTM: NG908685).
Pond #4 (Ochre Pond) (UTM: NG907685).
Ochre Minor (UTM: NG907686).

| DATE | TIME | H2O °C | T/W/S | SPECIES | egg mass | larvae | young | adult | NOTES | seen by |
|----------|----------------|--------|--------|--------------|------------|--------|--------------------|--------|---|---------|
| 00/05/14 | 15:00 | 13 | 13/1/2 | WOFR | 1 | | | | Pond #1. Found on E side; WOFR egg masses (fresh) and LTSA eggs, embryos elongating, a few dead eggs. Water levels the lowest we have seen since 1992. | M&DM |
| 00/05/19 | 14:45 16:15 | 18 | 16/1/2 | LTSA BOTO | 1 8 | | 1 | | Pond #1. BOTO egg masses in S Bay. Juvenile (30-35 mm.) on W side of pond. depth: 3-4 cm. | M&DM |
| 00/07/08 | 12:00 16:30 | 20 | 18/1/2 | BOTO | | 10000+ | | 1 | Pond #1. BOTO tadpoles found mostly on E side and N end., concentrated in shallow water (2 cm. deep). A few showing hind legs. Saw adult on E side. | MM |
| 00/08/13 | 14:15 16:30 | 17 | 20/0/2 | WOFR BOTO | | | 15 | 1 | Pond #1. Toadlets 10 - 20 mm. | MM |
| 00/05/14 | 16:40 | 18 | 13/1/2 | WOFR | 1 | | | | West of Pond #1. Embryos starting to elongate. | M&DM |
| 00/07/08 | 16:15 | | | BOTO | | | 1 juv. | 1 | West of Pond #1. | MM |
| 00/07/08 | 12:30 16:30 | 23 | 19/1/2 | WOFR BOTO | | 1000+ | | 1 | Pond #2. Adult WOFR found at N end. BOTO tadpoles found on E side and S end in several concentrations in shallow water. None with legs showing. Juveniles measure 30 - 40 mm. | MM |
| 00/08/13 | 14:15 16:30 | 18 | 20/0/2 | WOFR BOTO | | | 1 1 | | Pond #2. | MM |
| 00/05/19 | 14:45 16:15 | 15 | 16/1/2 | BOTO | 2 | | | 1 | Pond #3. BOTO egg strings in S/E corner. Adult at N end. Water depth: 3-5 cm. Nothing new found in other ponds. | M&DM |
| 00/07/08 | 12:00 16:30 | 19 | 19/1/2 | WOFR BOTO | | 100+ | 3 juv. 1 juv. | 2 | Pond #3. WOFR juveniles less than 20 mm. Seen at N/W corner. BOTO tadpoles scattered throughout pond. Juvenile measuring 25 mm. and adults found at N end. | MM |
| 00/08/13 | 14:15 16:30 | 19 | 20/0/2 | WOFR BOTO | | | 10 21 1 juv. | | Pond #3. Froglet 15 - 25 mm. Toadlets 10-20 mm. One juvenile BOTO. | MM |
| 00/05/14 | 15:30 | 12 | 13/1/2 | WOFR LTSA | 42 3 | | | | Pond #4 (Ochre Pond). WOFR egg masses had deteriorated, algae covered, some dead eggs, some elongating embryos, few hatchlings; 1 of 7, 1 of 1, 1 of 1, 1 of 1, 1 of 23, 1 of 7 (3 of those masses were fresh), 1 of 1, 1 of 1. LTSA egg masses had elongated embryos and a few dead eggs. | M&DM |
| 00/07/08 | 12:00 16:30 | 18 | 20/1/2 | WOFR LTSA | 300+ 9+ | | | 1 | Pond #4 (Ochre Pond). Some WOFR tadpoles showing hind legs. LTSA larvae showing all legs. | MM |
| 00/08/13 | 14:15 16:30 | 22 | 20/0/2 | WOFR BOTO | | | 7 2 | | Pond #4 (Ochre Pond). | MM |
| 00/05/14 | 15:45 | 10 | 13/1/2 | WOFR | 1 | | | | Ochre Minor. One egg mass with a few dead eggs. | M&DM |
| 00/07/08 | 12:00 16:30 | 18 | 20/1/2 | WOFR BOTO | | 100+ | | 1 dead | Ochre Minor. | MM |

LOCATION: TCH WEST

SITE DESCRIPTION:

WL-7 (Boto Pond) (km. 36.8 -37.5) (UTM: NG834749) large gravel pit with pond at east end of disturbed area. Has drainage channel to the Bow River on north side. Stump Pond and West End Pond are at the west end of that complex.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|-------|-------|--|---------|
| 00/06/07 | 10:10 | | 18/0/2 | BOTO | 1 | | | | <u>WL-7 (Boto Pond)</u> . Egg string with hatchlings. WOFR: 1 seen and heard, another one heard calling in channel between BOTO pond and Stump Pond. | MM |
| 00/06/07 | 11:20 | | 18/0/2 | WOFR | 2 | | | | <u>WL-7 (West End Pond)</u> . Egg masses on N Side; 1 with dead embryos, other 3 with hatchlings. | MM |
| 00/06/07 | 11:00 | | 18/0/2 | WOFR | 4 | | | | | MM |

BOW VALLEY PARKWAY

LOCATION: BVP Wetland.

SITE DESCRIPTION: series of ponds on North (UTM: NG937694) and South side (NG938693) of CP tracks at the start of the Bow Valley Parkway. Cory Pond (UTM: NG934693) is located west of South Ponds on south side of CP tracks.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|-------|-------|---|---------|
| 00/08/27 | 12:15 | 15 | 14/0/2 | LTA | | 4 | | | <u>Cory Pond</u> . Larvae showing all legs. | MM |

LOCATION: Muleshoe Area

SITE DESCRIPTION: west of Muleshoe - series of wetlands, ponds that are described as:

- Goose Pond (UTM: NG891706) west of Muleshoe - floating bog north of CP track (just east of Stunted Spruce).
- Pond #1 (UTM: NG892705) small wetland (choked with reeds) just west of Trans Alta fenced area, on north and beside CP tracks.
- Pond #2 (UTM: NG892706) small pools (1 square) between "Goose Pond" and Pond #1.
- Pond #3 (UTM: NG891705) opposite Pond #1, below and on south side of track - channel that runs along track and south to beaver pond complex.
- Pond #4 (UTM: NG890706) located west of Pond #3, on south side of track.
- Primrose Pond (UTM: NG891704) is the beaver pond complex mentioned above.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|-------|-------|---|---------|
| 00/04/19 | 15:00 | 12 | 16/2/0 | | | | | | Nothing seen or heard in Muleshoe Area | M&DM |
| 00/04/23 | 12:30 | 11 | 8/2/2 | WOFR | | | | 3+ | <u>Goose Pond</u> . Heard and one seen. | MM |
| 00/04/27 | 16:00 | 13 | 16/1/1 | WOFR | 34 | | | many | <u>Goose Pond</u> . Heard many calling all through pond. Most in the N/W corner where eggs seen: 1 of 1, 1 of 1, 1 of 1 (eggs elongating), 1 of 31. | M&DM |
| 00/04/27 | 15:00 | 15 | 16/1/1 | WOFR | 33 | | | 200 | <u>Pond #1</u> . Saw and heard 200 WOFR in the deeper part of pool on E side. Eggs in mid area. | M&DM |
| 00/05/04 | 16:45 | 11.5 | 7/2/2 | WOFR | 53 | | | 20+ | <u>Pond #1</u> . Egg masses; 1 of 5, 1 of 5, 1 of 4, 1 of 5, 1 of 3, 1 of 31. | MM |
| 00/04/27 | 15:45 | 13.5 | 16/1/1 | WOFR | 1 | | | 3+ | <u>Pond #2</u> . Saw and heard at least 3. Eggs fresh. | MM |
| 00/04/23 | 12:00 | 9.5 | 8/2/2 | WOFR | | | | 5+ | <u>Pond #3</u> . Heard in area S/W of pond. | MM |
| 00/04/27 | 15:30 | 15 | 16/1/1 | WOFR | | | | many | <u>Pond #3</u> . Many heard in the area S of tracks, all the ponds, canals. Water quite shallow. Eggs fresh. | M&DM |
| 00/05/04 | 17:00 | 15 | 7/2/2 | WOFR | 7 | | | 1 | <u>Pond #3</u> . Egg masses: 1 of 1, 1 of 2, 1 of 2, 1 of 1, 1 of 1. | MM |
| 00/05/04 | 17:10 | 12 | 7/2/2 | WOFR | 2 | | | 1 | <u>Pond #4</u> . 1 egg mass found in pond. 1 more along channel. One seen in the channel. | MM |
| 00/05/04 | 17:00 | | | | | | | some | <u>Primrose Pond</u> . Several WOFR heard. | MM |

LOCATION: Stunted Spruce Pond (UTM: NG889713).

SITE DESCRIPTION: small pond (wetland) west of Muleshoe on south side of Bow Valley Parkway - boggy area with stunted trees around pond.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|-------|-------|---|---------|
| 00/04/23 | 13:30 | 12 | 8/2/2 | | | | | | Nothing seen or heard. Mike took a dive. | MM |
| 00/05/01 | 16:50 | | 15/3/2 | WOFR | | | | 2+ | Heard faint calls coming from E end. | M&DM |
| 00/05/04 | 16:25 | 15 | 7/2/2 | WOFR | 16 | | | 2 | Heard 2 WOFR. Fresh egg masses seen on N side and at E end. | MM |
| 00/05/13 | 16:00 | 12 | 9/0/5 | WOFR | 16 | | | | Walked around pond. Same WOFR egg masses as last visit. LTSA egg masses found at W end. | M&DM |
| | | | | LTSA | 2 | | | | | |

LOCATION: Ranger Creek Willow Flats. (UTM: NG872733).

SITE DESCRIPTION: flooded willow stand located 6 km. west of Skull Creek, below pull-off on south side of Bow Valley Parkway (BVP).

Ranger Creek Beaver Pond (UTM: NG873727) large pond formed by recent beaver dam at south end of willow flat.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|-------|-------|---|---------|
| 00/05/01 | 16:45 | | 15/3/2 | | | | | | Nothing seen or heard. Water high. | M&DM |
| 00/05/13 | | | | | | | | | Water too high for hip waters. Beaver pond full. Nothing heard. | M&DM |

LOCATION: Frog Hollow (UTM: NG834755).

SITE DESCRIPTION: small "kettle" pond east of Lizard Lake and south side of Bow Valley Parkway.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|-------|-------|---|---------|
| 00/05/01 | 16:35 | | 15/3/2 | WOFR | | | | 2+ | Heard at least 2 from BVP. Faint calls. | M&DM |
| 00/05/13 | 15:10 | 9 | 9/1/5 | WOFR | 10 | | | | Found egg masses on S side: 1 of 1, 1 of 7, 1 of 1 (elongating, few dead embryos), 1 of 1 (elongating). Water 30-35 cm. deep. | M&DM |

LOCATION: Moose Meadow Wetland. (UTM: NG795785).

SITE DESCRIPTION: series of ponds just west of Johnston, Creek in a rehabilitated site (old gravel pit) between CP tracks and river.

South Channel: natural channel relatively undisturbed on south side of disturbed area.

Moose Meadow Pools (UTM NG802783) small pools located at northern edge of the meadow, south of Bow Valley Parkway.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|----------------|----------|------------------|----------------------|----------|---------------|-------|-------|---|---------|
| 00/07/25 | 10:15 16:00 | 23 | 15/0/0 26/0/1 | WOFR SPFR BOTO | | 100+ 1000+ | | 1 | South Channel. One adult WOFR seen on S side. SPFR tadpoles found in deeper water in a few areas along the S edge and in a small pond beside Barrenak Pond. Possibly some WOFR tadpoles in amongst them. BOTO tadpoles found in the shallowest water along S edge. Some showing hind legs. | M&DM |
| 00/05/08 | 12:15 | 6.5 | 9/0/1 | LTSA | 12 | | | | Moose Meadow Pools. Seen in middle pond. Thin ice on part of the pool. Last night's temp. was -4° C. | M&DM |
| 00/05/13 | 14:40 | 9-10 | 9/2/5 | LTSA | 15 | | | | Moose Meadow Pools. Saw 3 egg masses in pool N and 12 in mid pool. | M&DM |
| 00/05/25 | 15:40 | 14 15 | 15/2/1 | LTSA | 8 | | | | Moose Meadow Pools. 8 LTSA egg masses still showing. Only 2 in N pond Saw one hatching. The egg masses in middle of pond were near hatching. | M&DM |
| 00/07/27 | 12:15 | | 19/1/1 | LTSA | 40+ | | | | Moose Meadow Pools. Larvae showing all legs, some were quite small. | MM |

LOCATION: Castle Junction Area.

SITE DESCRIPTION:

Smith Lake (UTM: NG750780) south of Copper over a ridge and at higher elevation. Small Ponds West of Smith Lake located beside trail before reaching Smith Lake.

Curve Pond (UTM: NG728784) located west of trail to Twin Lakes.

Strider Pond (UTM: NG715783) located north of Vista Lake, high above Altrude Creek.

Vista Lake (UTM: NG685767) located at north end and on east side of Kootenay Parkway, north of Altrude Lakes.

Boom Lake (UTM: NG643791) at the outlet of the lake.

Boom Lake Trailhead (UTM: NG683777) small pools located on east side of Kootenay Parkway across from Boom Lake Parking Lot.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------------|----------|--------|--------|-------|--|---------|
| 00/06/07 | 15:00 | | 21/0/2 | WOFR | 5 | | 2 juv. | 1 | Smith Lake Area, Upper Pond. Juv. WOFR measured 20 mm. in length, adult 50 mm. in length. Found at W end. Egg masses with some hatchlings and a few tadpoles found at E end. | MM |
| 00/05/20 | 14:00 | 8 - 12 | 13/0/2 | WOFR SPFR | 31 3 | | | | Curve Pond. Found WOFR egg masses: 28 at E end; 7 fresh, 6 elongating embryos, 15 with hatchlings (water depth: 20 cm.). 3 other egg masses were scattered at W end; 2 fresh, 1 elongating embryos. SPFR egg masses; one with hatchlings, 2 with embryos elongating (water depth: 20 cm.). Those were found on N along grassy shoreline in shallower water. | MM |
| 00/05/25 | 14:00 | 16 | 14/1/1 | | | | | | Strider Pond. Nothing seen or heard. | M&DM |
| 00/09/26 | 14:30 | 13 | 17/0/0 | BOTO | | 210+ | | | Vista Lake. 75% of tadpoles showing hind legs, 25% showing all legs. Found in shallow water at outlet of lake. | MM |
| 00/10/08 | 12:15 | 1.5 | 12/1/0 | BOTO | | 60+ | | | Vista Lake. 50% were alive. Most showing all legs, a few with hind legs only. 50% were either not moving or dead. Water 2-4 cm. deep and under thin ice. | MM |
| 00/07/27 | 9:45 | | 14/1/1 | BOTO | | 50+ | | | Boom Lake. Small tadpoles seen in shallow water along outlet stream. | MM |
| 00/09/08 | 14:15 | 17 | 16/0/1 | BOTO | | 60+ | | | Boom Lake. Tadpoles mostly with hind legs showing, a few with all legs. Seen at the edge of outlet stream. | MM |
| 00/05/08 | 12:45 | 13 | 9/0/1 | | | | | | Boom Lake Trailhead. Nothing seen. | M&DM |
| 00/06/15 | 11:30 | 10.5 | 10/2/2 | BOTO | | many | | | Boom Lake Trailhead. Saw 1000+ of hatchlings and small tadpoles. Possibly hatched from 3 egg strings. | M&DM |
| 00/07/27 | 11:45 | | 18/1/1 | BOTO | | 1000+ | | | Boom Lake Trailhead. Many showing hind legs. | MM |
| 00/09/08 | 16:00 | 16 | 17/0/1 | BOTO | | 100+ | 8 | | Boom Lake Trailhead. Most tadpoles showing all legs, a few showing hind legs only. Thy toadlets. | MM |

LOCATION: Bow Valley Parkway west of Castle Junction.

Site Description:

Castle Cliffs Wetland (UTM: NNG748807) located 1 km. west of Castle Junction, on north side of Parkway.

Trackers Wetland (UTM: NG745917) located west and upslope from Castle Cliffs Wetland on N side of Bow Valley parkway near viewpoint.

| DATE | TIME | H2O °C | T/W/S | SPECIE | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------|----------|--------|-------|-------|--|---------|
| 00/05/13 | 14:00 | 6 | 9/2/5 | LTSA | 20+ | | | | Castle Cliffs Wetland. Eggs found on N side. | M&DM |
| 00/05/20 | 12:45 | 4.5 | 12/0/2 | WOFR | 3 | | | | Castle Cliffs Wetland. New fresh egg masses found at W end. Water depth: 20 cm. | M&DM |
| 00/07/14 | 15:15 | 27 | 23/1/1 | BOTO | | 150+ | | | Trackers Wetland. Found in water 2-4 cm. deep. | M&DM |

LAKE LOUISE AREA

LOCATION: Lake Louise Area.

SITE DESCRIPTION:

Bog Birch Pools (UTM: NG668853) a serie of 4 pools located 1 km. west of Taylor Creek up a drainage on the south side of TCH.

| DATE | TIME | H2O °C | T/W/S | SPECIES | egg mass | larvae | young | adult | NOTES | seen by |
|----------|------|--------|-------|---------|----------|--------|-------|-------|--|---------|
| 00/07/14 | | | | | | | | | <u>Bog Birch Pools.</u> Nothing found. | M&DM |

ICEFIELDS PARKWAY

LOCATION: Icefields Parkway (from south to north).

Ramshorn Pond (UTM: NG558989) located up small creek at south end of rock slab on east side of Icefield Parkway, 200 m. from TCH Junction.
Crowberry Pond (UTM: NH542007) located over a ridge on west side of Herbert Lake.
Bow Lake Outlet (UTM: NH395228) located at south end of Bow Lake.
Num-N-Jah Pools (UTM: NH370253) located just across the lakeshore trail from Bow Lake.
Bow Summit Pond (UTM: NH350298) located on east side of Bow Summit, beside old abandoned road. Elevation: 2070 m.
Sunset Pond (UTM: NH063684) located beside parking lot for Sunset Pass trail.
Sunset West (UTM: NH063684) located opposite Sunset Pond on west side of Icefields Parkway. Depressions (puddles) on old dirt track.
Asphodel Pond (UTM: NH039709) located 11 km. north of Rampart Creek Campground, on east side of Icefields Parkway.

| DATE | TIME | H2O °C | T/W/S | SPECIES | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|---------|----------|--------|-------|-------|--|---------|
| 00/06/26 | 14:30 | 17 | 17/0/1 | L TSA | many | few | | | <u>Ramshorn Pond.</u> Spotted a few very small larvae at the bottom of the pond. | M&DM |
| 00/06/26 | 13:30 | 15 | 15/0/1 | L TSA | | | | | <u>Crowberry Pond.</u> Egg masses that had hatched found on E side in water too deep to reach into. | M&DM |
| 00/09/06 | 14:40 | 18 | 16/0/1 | BOTO | | 150+ | 1 | | <u>Bow Lake Outlet.</u> Tadpoles with hind legs showing, some showing all legs, tail not resorbed. Found in shallow pools on N side of stream to meadow, and east and above main outlet pool. | MM |
| 00/09/06 | 8:30 | 3 | 5/0/0 | BOTO | | 12 | | | <u>Num-N-Jah Pools.</u> Tadpoles with hind legs found in shallow water. | MM |
| 00/06/26 | 11:00 | 12 | 12/0/1 | BOTO | 14 | many | | | <u>Bow Summit Pond.</u> Found on E side 10 strings with hatchlings in water 6 cm. deep. A few strings had elongated embryos and 4 strings found in deeper water (10 cm.) were fresh. | M&DM |
| 00/07/07 | 11:20 | 13 | 14/0/2 | | | | | | <u>Sunset Pond.</u> Nothing found. | M&DM |
| 00/07/07 | 11:20 | 13 | 14/0/2 | BOTO | | 2000+ | | | <u>Sunset West.</u> Found in puddles of dirt track. Water 2-6 cm. deep. | M&DM |
| 00/07/07 | 10:50 | 15 | 14/0/2 | BOTO | | 1000+ | | | <u>Asphodel Pond.</u> Seen in 2 separate pools half way downstream. The higher pool had good size tadpoles, about 500 in water 2-4 cm. Tadpoles found in lower pool were smaller, about 500 in water 2-8 cm. Elk had trampled the edge of the pools. | M&DM |

AREAS IN KOOTENAY NATIONAL PARKS

LOCATION: Kootenay National Park.

SITE DESCRIPTION:

Kerr Ponds (UTM: NG663754) located near the northern boundary of Kootenay Park, on west side of Kootenay Parkway. It's a rehabilitated site (old gravel pit) with several small catch basins.

Simpson Mineral Lick (UTM: NG733496) located 1.2 km. north of Simpson River Crossing, on east side of Kootenay Parkway.

Simpson North (UTM: NG732494) located opposite side of highway from Simpson Mineral Lick, and slightly south.

Simpson Pool & Channel (UTM NG) located north of Simpson North, on west side of Kootenay Parkway.

Simpson South (UTM: NG733496) approximately 400 m. north of Simpson River Crossing, on the other side of a low ridge with culvert separating it from Simpson North.

Rescue Pond (UTM: NG) located 11.5 km. south of Kootenay River Crossing and 2.5 km. south of Crook's Meadow on west side of Kootenay Parkway.

Violet Pond (UTM: NG) located S. of Rescue Pond. Narrow wetland fed by a small creek running through an old culvert at northwest end.

Cattails at south end.

| DATE | TIME | H2O °C | T/W/S | SPECIES | egg mass | larvae | young | adult | NOTES | seen by |
|----------|----------------|----------------|--------|--------------|----------|--------|--------|-------|--|---------|
| 00/05/08 | 12:55 | | | | | | | | Kerr Ponds. Mostly covered with snow. | M&DM |
| 00/07/19 | 11:45 12:30 | 20 21 24 | 25/0/1 | BOTO | | 1500+ | 1 juv. | | Kerr Ponds. Large tadpoles (no legs showing) in smaller pool. Some smaller tadpoles found other pools. Water quite shallow. May dry up before tadpoles have a chance to mature. Temp. varied in each pool. | MM |
| 00/04/22 | 16:05 | | ?/2/2 | | | | | | Simpson Mineral Lick. Nothing seen or heard. | M&DM |
| 00/05/01 | 15:40 | 17 | 15/3/2 | | | | | | Simpson Mineral Lick. Nothing seen or heard. | M&DM |
| 00/05/08 | 15:00 | 17-18 | 13/0/2 | BOTO LTSA | 1 3 | | | | Simpson Mineral Lick. BOTO egg string drying out in pool farthest east. LTSA eggs found in larger pool. | M&DM |
| 00/05/23 | 15:15 | 14 | 14/2/1 | SPFR BOTO | 1 2 | Some | | | Simpson Mineral Lick. One SPFR egg mass with hatchlings, a few tadpoles swimming all through pond. BOTO egg strings: 1 fresh, 1 with hatchlings. The one seen in small E pool on May 18 has dissolved. Hatchlings lying still at bottom. Water depth: 3-6 cm. | M&DM |
| 00/05/08 | 15:15 | 16 | 13/0/2 | LTSA | 9 | | | | Simpson North. Found egg masses in deepest pool at S end, near culvert. | DM |
| 00/05/08 | 14:40 | 13 -15 | 13/0/2 | LTSA | 14 | | | | Simpson Pool and channel. Found 5 egg masses in pool, 9 in channel. | M&DM |
| 00/04/22 | 16:00 | | ?/2/2 | | | | | | Simpson South. Nothing seen or heard. | M&DM |
| 00/05/01 | 15:30 | 16 | 15/3/2 | SPFR | 2 | | | | Simpson South. Found 2 fresh egg masses side by side in same area as previous years. Water quite low. North end dry. | M&DM |
| 00/05/08 | 15:15 | 15 | 13/0/2 | SPFR LTSA | 5 6 | | 1 | | Simpson South. Found 3 new SPFR egg masses in water 10 cm. deep. The 2 older egg masses have embryos elongating. LTSA eggs found on W side. Adult seen under a board. | M&DM |
| 00/05/08 | 16:00 | 9 | 13/0/2 | | | | | | Rescue Pond. Nothing seen or heard. | M&DM |
| 00/05/08 | 16:15 | 11 | 13/0/2 | SPFR | 2 | | | | Violet Pond. Older egg masses found in middle of pond. | M&DM |

AREAS IN THE BOW VALLEY EAST OF BANFF NATIONAL PARK

LOCATION: Yamnuska Natural Area.

SITE DESCRIPTION: at the base of Mt. Yamnuska and Mt Loder north of Seebe.

Old Beaver Pond: (UTM: PG334635).

Stony Meadow Pond: (UTM: PG333632).

Willow Pond: (UTM: PG339636).

Yellowleg Pond: (UTM: PG340638), beaver activity including lodge (1996).

| DATE | TIME | H2O °C | T/W/S | SPECIES | egg mass | larvae | young | adult | NOTES | seen by |
|----------|-------|--------|--------|--------------|-----------|--------|-------|---------|---|---------|
| 00/09/24 | 13:45 | 8 | 18/1/0 | SPFR | | | 2 | 1 | Old Beaver Pond. One adult (35-40 mm.) beside beaver canal upper pond. 2 juv. (25 mm.) in moist spring area at N end of upper pond, 8 m. from pond. | M&DM |
| 00/04/25 | 15:20 | 9 | 11/2/2 | WOFR SPFR | 11 | | | 2+ | Stony Meadow Pond. 1 of 11 WOFR egg masses found on S side. Heard one SPFR. | M&DM |
| 00/04/25 | 14:30 | 11 | 11/1/2 | WOFR SPFR | 100+ 2 | | | 5+ 1 | Willow Pond. Water levels overflowing. Heard at least 3 WOFR and found huge cluster of 100+ fresh egg masses, 1 of 1 near it and 1 of 1 at a distance. A mated pair was moving around the large egg cluster. The 2 SPFR egg masses were near each other. Heard one calling. | M&DM |
| 00/04/25 | 15:45 | 9 | 11/3/2 | WOFR | | | | 3+ | Yellowleg Pond. Heard in S/E area. | M&DM |
| 00/09/24 | | | | | | | | | Yellowleg Pond. Pond has drained almost completely except for a bit of water in deeper in channels. | M&DM |